

5/9/1 (Item 1 from file: 2)

DIALOG(R) File 2:INSPEC

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5051977 INSPEC Abstract Number: B9511-7230C-004

Title: High speed metal-semiconductor-metal photodetector manufactured on GaAs by low-temperature photoassisted metalorganic chemical vapor deposition

Author(s): Boutros, K.S.; Roberts, J.C.; Bedair, S.M.; Carruthers, T.F.; Frankel, M.Y.

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Journal: Applied Physics Letters vol.66, no.26 p.3651-3

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CODEN: APPLAB ISSN: 0003-6951

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Language: English Document Type: Journal Paper (JP)

Treatment: Experimental (X)

Abstract: We report on the photoassisted metalorganic chemical vapor deposition (MOCVD) of high resistivity gallium - arsenide at low-temperature (LT-GaAs). The as-grown GaAs exhibits a resistivity of approximately $10/\sup 6/\Omega\text{ cm}$ and has been used as the active layer of a metal-semiconductor-metal (MSM) Schottky-barrier photodetector. The impulse response of the detector is 4 ps with a dark current of 4 nA at a bias of 2 V. These results are comparable to those obtained from Lt-GaAs grown by molecular beam epitaxy (MBE). (22 Refs)

Subfile: B

Descriptors: chemical vapour deposition; gallium arsenide; III-V semiconductors; metal-semiconductor-metal structures; photodetectors; Schottky diodes; semiconductor growth

Identifiers: high speed device; metal-semiconductor-metal photodetector; low-temperature photoassisted metalorganic chemical vapor deposition; high resistivity gallium - arsenide ; Schottky-barrier photodetector; impulse response; dark current; 4 ps; $10/\sup 6/\Omega\text{ cm}$; 4 nA; 2 V; GaAs

Class Codes: B7230C (Photodetectors); B4250 (Photoelectric devices); B0520F (Vapour deposition); B2520D (II-VI and III-V semiconductors)

Chemical Indexing:

GaAs int - As int - Ga int - GaAs bin - As bin - Ga bin (Elements - 2)

Numerical Indexing: time $4.0\text{E}-12\text{ s}$; electrical resistivity $1.0\text{E}+04\text{ ohmm}$; current $4.0\text{E}-09\text{ A}$; voltage $2.0\text{E}+00\text{ V}$

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5/9/8 (Item 8 from file: 2)

DIALOG(R) File 2:INSPEC

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02039444 INSPEC Abstract Number: A83047387

Title: Spectral characteristics of the longitudinal photocurrent in high-resistivity GaAs

Author(s): Ivanova, E.I.

Author Affiliation: S.M. Kirov Forestry Acad., Leningrad, USSR

Journal: Fizika i Tekhnika Poluprovodnikov vol.16, no.9 p.1694-5

Publication Date: Sept. 1982 Country of Publication: USSR

CODEN: FTTPA4 ISSN: 0015-3222

Translated in: Soviet Physics - Semiconductors vol.16, no.9 p.1084-5

Publication Date: Sept. 1982 Country of Publication: USA

CODEN: SPSEAX ISSN: 0038-5700

U.S. Copyright Clearance Center Code: 0038-5700/82/091084-02\$03.90

Language: English Document Type: Journal Paper (JP)

Treatment: Experimental (X)

Abstract: The author investigated the spectral characteristics of the longitudinal photocurrent in the intrinsic and extrinsic photoconductivity regions of high-resistivity gallium arsenide ($\rho = 10^9 - 10^{10} / \Omega \cdot \text{cm}$) at room temperature. An evaporated nickel film was used as the semitransparent electrode. A study was made of the dependence of the spectral longitudinal photocurrent on the polarity of the applied voltage relative to the semitransparent electrode, i.e. of the shift of the spectral photosensitivity from the intrinsic to the extrinsic photoconductivity region. (3 Refs)

Subfile: A

Descriptors: gallium arsenide; III-V semiconductors; photoconductivity

Identifiers: semiconductors; longitudinal photocurrent; GaAs; photoconductivity regions

Class Codes: A7240 (Photoconduction and photovoltaic effects; photodielectric effects); A7280E (III-V and II-VI semiconductors)

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